

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Application No.: 10/711,238
Applicants: Albert et al.
Confirmation No.: 5237
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Cambridge, Massachusetts
July 2, 2008

RESPONSE TO NOTIFICATION OF NON-COMPLIANT APPEAL BRIEF

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria VA 22313-1450

Sir:

In response to the Notification of Non-Compliant Appeal Brief (Form PTOL-462) issued June 6 in connection with the above application, and in accordance with MPEP 1205.03, Paragraph (B), please substitute enclosed pages 7-10, comprising a revised "Summary of Claimed Subject Matter" section of the Appeal Brief, for the corresponding pages of the Appeal Brief filed on June 2. To show the exact amendments effected, there is also filed herewith a "red-lined" version of pages 7-10; in this red-lined version, insertions (i.e., material in the present text but not in the earlier one) are double underlined, deletions (i.e., material present in the earlier text but not in the present one) is doubly struck through, and all changes are marked by a vertical bar in the left margin.

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SUMMARY OF CLAIMED SUBJECT MATTER

The claimed invention is illustrated in Figures 5A-5F of the application. Claim 1 is directed to an electrically active display (40; 56; 70; 80; 90; 98) comprising a bistable optoelectrically active display medium (46) capable of changing its optical state upon application of an electric field thereto and having first and second surfaces on opposed sides thereof (the upper and lower surfaces as illustrated in Figures 5A-5F). The display further comprises an optically transmissive electrode (44) in contact with the first (upper) surface of the display medium (46), and an adhesive layer (48; 64) disposed on the second (lower) surface of the display medium (46); the (lower – as illustrated in Figures 5A-5F) surface of the adhesive (48; 64) remote from the display medium (46) forming an external surface of the display (40; 56; 70; 80; 90; 98), so that the display (40; 56; 70; 80; 90; 98) can be attached to a receiving surface (for example, a backplane comprising rear electrodes; see Paragraph 70 of the specification) by the adhesive layer (48; 64).

Claim 2 is directed to a display according to claim 1 further comprising an optically transmissive layer (the substrate 42 – see Paragraph 69, second sentence) on the opposed side of the electrode (44 – see Paragraph 69, second sentence) from the display medium (46 – see Paragraph 69, second sentence).

Claim 3 is directed to a display according to claim 1 in which the electrode (44) comprises a metal oxide, for example the ITO (indium tin oxide) mentioned in claim 4 and in Paragraph 69 of the specification.

Claim 5 is directed to a display according to claim 1 in which the display medium (46) comprises bichromal microspheres, as mentioned in Paragraph 69 of the specification.

Claim 6 is directed to a display according to claim 1 in which the display medium (46) comprises an electrophoretic medium comprising at least one species of particles dispersed in a fluid medium, while claim 7 is directed to such a display in which

the display medium (46) comprises an encapsulated electrophoretic medium; see Paragraphs 10 and 69 of the specification.

Claim 8 is directed to a display according to claim 1 further comprising at least one conductive via (60 in Figures 5B, 5C and 5E – see Paragraph 71, second sentence) extending from the electrode (44 – see Paragraph 71, second sentence) through the display medium (46 – see Paragraph 71, second sentence). Claim 9 is directed to a display according to claim 8 further comprising at least one contact pad (62 in Figures 5B, 5C and 5E – see Paragraph 71, second sentence) electrically connected to the at least one via (60 – see Paragraph 71, second sentence) and disposed on the opposed side of the display medium (46) from the electrode (44).

Claims 16-19 will now be discussed out of numerical order so as to deal with all the claims directed to displays before turning to claims directed to processes for forming such displays.

Claim 16 is directed to a display according to claim 1 further comprising at least one rear electrode (82 in Figures 5D and 5E) disposed between the display medium (46) and the adhesive layer (64). Claim 17 is directed to a display according to claim 16 in which at least the portion of the adhesive layer (64) covering the at least one rear electrode (82) is conductive (see for example Paragraph 73 of the specification).

Claim 18 is directed to an electrically active display (80; 90 – see Paragraphs 73 and 74) comprising a bistable optoelectrically active display medium (46 – see Paragraph 73, first sentence) capable of changing its optical state upon application of an electric field thereto and having first and second surfaces on opposed sides thereof. The display further comprises an optically transmissive first electrode (44 – see Paragraph 69, fourth sentence and Paragraph 73, first sentence) in contact with the first (upper as illustrated in Figures 5D and 5E) surface of the display medium (46), an adhesive layer (64 - see Paragraph 73, first sentence) disposed on the second (lower)

surface of the display medium (46), and at least one second electrode (82 – see Paragraph 73, first sentence) disposed between the display medium (46) and the adhesive layer (64).

Claim 19 is directed to a display according to claim 18 in which at least the portion of the adhesive layer (64) covering the at least one second electrode (82) is conductive (see for example Paragraph 73 of the specification).

Claim 10 is directed to a process for forming a display using the structure of claim 1. This process comprises providing an electrically active display (40; 56; 70; 80; 90; 98) comprising a bistable-optoelectrically active display medium (46) capable of changing its optical state upon application of an electric field thereto and having first and second surfaces on opposed sides thereof; an optically transmissive electrode (44) in contact with the first surface of the display medium (46); and an adhesive layer (48) disposed on the second surface of the display medium (46), the surface of the adhesive (48) remote from the display medium (46) forming an external surface of the display (40; 56; 70; 80; 90; 98). The process further comprises providing a receiving surface comprising at least one electrode (see Paragraph 70 of the specification) and attaching the display (40; 56; 70; 80; 90; 98) to the receiving surface by means of the adhesive layer (48).

Claim 11 is directed to a process according to claim 10 in which the display (40; 56; 70; 80; 90; 98) comprises at least one conductive via (60 in Figures 5B, 5C and 5E – see Paragraph 71, second sentence) extending from the electrode (44 – see Paragraph 71, second sentence) through the display medium (46 – see Paragraph 71, second sentence), and in which, after attachment of the display (40; 56; 70; 80; 90; 98) to the receiving surface, the via (60) is contacted with at least one electrode on the receiving surface (see Paragraph 71, third sentence) for holding the electrode at a specific potential.

Claim 12 is directed to a process according to claim 10 in which the display comprises an optically transmissive layer (the substrate 42 – see Paragraph 69,

second sentence) on the opposed side of the electrode (44 – see Paragraph 69, second sentence) from the display medium (46 – see Paragraph 69, second sentence).

Claim 13 is directed to a process according to claim 10 in which the display medium (46) comprises bichromal microspheres, as mentioned in Paragraph 69 of the specification.

Claim 14 is directed to a process according to claim 10 in which the display medium (46) comprises an electrophoretic medium comprising at least one species of particles dispersed in a fluid medium; see Paragraphs 10 and 69 of the specification.

Claim 15 is directed to a process according to claim 14 in which the display medium (46) comprises an encapsulated electrophoretic medium; see Paragraphs 10 and 69 of the specification.

Claim 20 is essentially directed to a process for forming a display using the structure of claim 18. This process comprises providing an electrically active display (80; 90) comprising an optoelectrically active display medium (46) capable of changing its optical state upon application of an electric field thereto and having first and second surfaces on opposed sides thereof. The display further comprises an optically transmissive first electrode (44) in contact with the first (upper as illustrated in Figures 5D and 5E) surface of the display medium (46), an adhesive layer (64) disposed on the second (lower) surface of the display medium (46), and at least one second electrode (82) disposed between the display medium (46) and the adhesive layer (64). The process further comprises providing a receiving surface comprising at least one electrode (see Paragraph 70 of the specification) and attaching the display (80; 90) to the receiving surface by means of the adhesive layer (64).

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SUMMARY OF CLAIMED SUBJECT MATTER

The claimed invention is illustrated in Figures 5A-5F of the application. Claim 1 is directed to an electrically active display (40; 56; 70; 80; 90; 98) comprising a bistable optoelectrically active display medium (46) capable of changing its optical state upon application of an electric field thereto and having first and second surfaces on opposed sides thereof (the upper and lower surfaces as illustrated in Figures 5A-5F). The display further comprises an optically transmissive electrode (44) in contact with the first (upper) surface of the display medium (46), and an adhesive layer (48; 64) disposed on the second (lower) surface of the display medium (46); the (lower – as illustrated in Figures 5A-5F) surface of the adhesive (48; 64) remote from the display medium (46) forming an external surface of the display (40; 56; 70; 80; 90; 98), so that the display (40; 56; 70; 80; 90; 98) can be attached to a receiving surface (for example, a backplane comprising rear electrodes; see Paragraph 70 of the specification) by the adhesive layer (48; 64).

Claim 2 is directed to a display according to claim 1 further comprising an optically transmissive layer (the substrate 42 – see Paragraph 69, second sentence) on the opposed side of the electrode (44 – see Paragraph 69, second sentence) from the display medium (46 – see Paragraph 69, second sentence).

Claim 3 is directed to a display according to claim 1 in which the electrode (44) comprises a metal oxide, for example the ITO (indium tin oxide) mentioned in claim 4 and in Paragraph 69 of the specification.

Claim 5 is directed to a display according to claim 1 in which the display medium (46) comprises bichromal microspheres, as mentioned in Paragraph 69 of the specification.

Claim 6 is directed to a display according to claim 1 in which the display medium (46) comprises an electrophoretic medium comprising at least one species of particles dispersed in a fluid medium, while claim 7 is directed to such a display in

which the display medium (46) comprises an encapsulated electrophoretic medium; see Paragraphs 10 and 69 of the specification.

Claim 8 is directed to a display according to claim 1 further comprising at least one conductive via (60 in Figures 5B, 5C and 5E – see Paragraph 71, second sentence) extending from the electrode (44 – see Paragraph 71, second sentence) through the display medium (46 – see Paragraph 71, second sentence). Claim 9 is directed to a display according to claim 8 further comprising at least one contact pad (62 in Figures 5B, 5C and 5E – see Paragraph 71, second sentence) electrically connected to the at least one via (60 – see Paragraph 71, second sentence) and disposed on the opposed side of the display medium (46) from the electrode (44).

Claims 16-19 will now be discussed out of numerical order so as to deal with all the claims directed to displays before turning to claims directed to processes for forming such displays.

Claim 16 is directed to a display according to claim 1 further comprising at least one rear electrode (82 in Figures 5D and 5E) disposed between the display medium (46) and the adhesive layer (64). Claim 17 is directed to a display according to claim 16 in which at least the portion of the adhesive layer (64) covering the at least one rear electrode (82) is conductive (see for example Paragraph 73 of the specification).

Claim 18 is directed to an electrically active display (80; 90 – see Paragraphs 73 and 74) comprising a bistable optoelectrically active display medium (46 – see Paragraph 73, first sentence) capable of changing its optical state upon application of an electric field thereto and having first and second surfaces on opposed sides thereof. The display further comprises an optically transmissive first electrode (44 – see Paragraph 69, fourth sentence and Paragraph 73, first sentence) in contact with the first (upper as illustrated in Figures 5D and 5E) surface of the display medium (46), an adhesive layer (64 – see Paragraph 73, first sentence) disposed on the second (lower)

surface of the display medium (46), and at least one second electrode (82 – see Paragraph 73, first sentence) disposed between the display medium (46) and the adhesive layer (64).

Claim 19 is directed to a display according to claim 18 in which at least the portion of the adhesive layer (64) covering the at least one second electrode (82) is conductive (see for example Paragraph 73 of the specification).

Claim 10 is directed to a process for forming a display using the structure of claim 1. This process comprises providing an electrically active display (40; 56; 70; 80; 90; 98) comprising a bistable-optoelectrically active display medium (46) capable of changing its optical state upon application of an electric field thereto and having first and second surfaces on opposed sides thereof; an optically transmissive electrode (44) in contact with the first surface of the display medium (46); and an adhesive layer (48) disposed on the second surface of the display medium (46), the surface of the adhesive (48) remote from the display medium (46) forming an external surface of the display (40; 56; 70; 80; 90; 98). The process further comprises providing a receiving surface comprising at least one electrode (see Paragraph 70 of the specification) and attaching the display (40; 56; 70; 80; 90; 98) to the receiving surface by means of the adhesive layer (48).

Claim 11 is directed to a process according to claim 10 in which the display (40; 56; 70; 80; 90; 98) comprises at least one conductive via (60 in Figures 5B, 5C and 5E – see Paragraph 71, second sentence) extending from the electrode (44 – see Paragraph 71, second sentence) through the display medium (46 – see Paragraph 71, second sentence), and in which, after attachment of the display (40; 56; 70; 80; 90; 98) to the receiving surface, the via (60) is contacted with at least one electrode on the receiving surface (see Paragraph 71, third sentence) for holding the electrode at a specific potential.

~~Claims 12-15 are directed to processes according to claim 10 having the same features as claims 2, 5, 6 and 7 respectively, as already discussed above.~~

Claim 12 is directed to a process according to claim 10 in which the display comprises an optically transmissive layer (the substrate 42 – see Paragraph 69, second sentence) on the opposed side of the electrode (44 – see Paragraph 69, second sentence) from the display medium (46 – see Paragraph 69, second sentence).

Claim 13 is directed to a process according to claim 10 in which the display medium (46) comprises bichromal microspheres, as mentioned in Paragraph 69 of the specification.

Claim 14 is directed to a process according to claim 10 in which the display medium (46) comprises an electrophoretic medium comprising at least one species of particles dispersed in a fluid medium; see Paragraphs 10 and 69 of the specification.

Claim 15 is directed to a process according to claim 14 in which the display medium (46) comprises an encapsulated electrophoretic medium; see Paragraphs 10 and 69 of the specification.

Claim 20 is essentially directed to a process for forming a display using the structure of claim 18. This process comprises providing an electrically active display (80; 90) comprising an optoelectrically active display medium (46) capable of changing its optical state upon application of an electric field thereto and having first and second surfaces on opposed sides thereof. The display further comprises an optically transmissive first electrode (44) in contact with the first (upper as illustrated in Figures 5D and 5E) surface of the display medium (46), an adhesive layer (64) disposed on the second (lower) surface of the display medium (46), and at least one second electrode (82) disposed between the display medium (46) and the adhesive layer (64). The process further comprises providing a receiving surface comprising at least one electrode (see Paragraph 70 of the specification) and attaching the display (80; 90) to the receiving surface by means of the adhesive layer (64).